Crime Prevention through Environmental Design

By Timothy D. Crowe and Diane L. Zahm

Crime prevention need not amount to building isolated walled and fenced communities. On the contrary, the same design techniques that make communities more attractive and more neighborly can also prevent crime.

Crime Prevention through Environmental Design (CPTED) has emerged worldwide as one of the most promising and currently effective approaches to reducing opportunities for crime. Although dramatic results have been achieved in every imaginable setting—from small stores to entire residential communities—many planners, designers, and developers remain reluctant or unwilling to incorporate CPTED into their work.

This article describes CPTED and dispels the myths that surround it. Perhaps the most important objective is to make clear that the elements that make a neighborhood safe are the same elements that make a "good" neighborhood. Further, CPTED concepts do not conflict with "neotraditionalism," "livable communities," or other popular design movements.

CPTED Operating Concepts

The basic tenet of crime prevention through environmental design is that proper design and effective use of the built environment can reduce the fear and incidence of crime and thereby improve the overall quality of life. While the tendency is to separate crime and fear of crime from other neighborhood issues, safety and security are components of quality of life in a neighborhood. That is why the first objective of crime prevention through environmental design is a high-quality, aesthetically pleasing built environment—not crime prevention per se, but good physical design. CPTED-emphasizes the following three design approaches:

- natural access control;
- natural surveillance; and
- territorial behavior.

Access control uses doors, shrubs, fences, gates, and other physical design elements to discourage access to an area by all but its intended users. Surveillance is achieved by placing windows in locations that allow intended users to see or be seen while ensuring that intruders will be observed as well. Surveillance is enhanced by providing adequate lighting and landscaping that allow for unobstructed

Residental developmental Seaside, Florida, uses fences and a variety of paving materials to designate the use of space. A front porch, second-floor balcony, and strategically placed windows allow for natural surveillance of the street where children play.

views. Finally, territory is defined by sidewalks, landscaping, porches, and other elements that establish the boundaries between public and private areas. These three strategies work together to create an environment in which people feel safe to live, work, travel, or visit.

Design elements can be supplemented with regularly scheduled staff such as recreation or maintenance personnel visible throughout the day to allow for the detection of inappropriate activities. Locks, cameras, and alarms (traditionally known as "target hardening") provide additional support in situations where physical design, staffing, and scheduling have limited effectiveness. Only the most problematic situations require the deployment of guards or police.

In other words, there are three ways to provide access control, surveillance, and a definition of territory.

• Natural strategies. Safety and security are provided through the design and layout of space, the location of windows, etc. Natural strategies have low human and capital resource requirements.

• Organized strategies. Security guards or police provide surveillance and access control but are labor-intensive and expensive.

• Mechanical strategies. Capital- or hardware-intensive security (e.g., alarms, cameras) provides access control and surveillance. Mechanical strategies may require additional employees to watch monitors, for example.

"CFIED emphasizes natural security strategies first. These strategies integrate behavior management into the normal functioning of a neighborhood, store, or offices. For example, the receptionist who asks, "May I help you?" serves as a natural means of access control and surveillance. These natural approaches are then supplemented with organized and mechanical methods of security, including guards and security systems as needed.

Relatively minor modifications to this apartment building in Louisville, Kentucky, drastically change the concept of territory by bringing the apartment out into the yard.

CRED History and Theory

Crime prevention through environmental design derives from a variety of disciplines concerned with the interactions between people and the physical environment. Attempts to control behavior through design and use are as old as civilization itself. Early Sumerian Codes (4000 B.C.) identified the importance of respect for property rights. The eighth century Chinese promoted harmony in the design of space—from the size of the smallest rooms to the planning of entire cities. North American Plains dwellers of the eighth through 11th centuries developed hierarchies of family and community identity and protection through the design

of living space. The cliff dwellers (U.S. Mesa Verde National Park) developed impregnable living areas in the face of cliffs, accessible only by ladders and entrances that could be sealed.

More contemporary proposals regarding the relationship between the environment and crime can be traced to Shaw and McKay and their work at the University of Chicago early in this century. But probably the most influential discussion of the urban environment and its relationship to crime is Jane Jacobs's *The Death and Life of Great American Cities,* published in 1961. Living in Greenwich Village, Jacobs observed that drastically different social environments could be found within only a few city blocks of one an-

other. She attributed the safer environments to the mix of land uses, consistent building setbacks, and short block lengths, among other characteristics, that resulted in 24-hour-a-day activity and "eyes on the street." According to criminologist CJR. Jeffery, "Jane Jacobs really started a lot of us thinking along these lines, and looking at land use and how people relate to the land, how people interact with their environment as basic to crime prevention."

Jeffery's recognition resulted in a significant contribution to the discipline of criminology. In fact, it was Jeffery who suggested that criminologists abandon their traditional focus on the offender and instead adopt a perspective that considered the environment in which an offender lived, worked, and traveled and the way in which that environment influenced the offender's behavior. Jeffery's book *Crime Prevention Through Environmental Design* (1971) ushered in a new era in criminological thought that focused on the circumstances surrounding a crime incident rather than the criminal offender.

Other criminologists demonstrated that offenders use their knowledge of frequently traveled routes in a city to identify potential crime targets. Newer

cities developed in the era of the automobile have a less concentric urban form and therefore a more dispersed pattern of crime. Major transportation arteries and the areas adjacent to them become part of an offender's awareness space. Thus, the transportation corridor generally and major intersections specifically exhibit higher concentration of crime.

In 1972, Oscar Newman published *Defensible Space,* based on his work in St Louis and New York City. Newman, an architect, focused on those physical design ingredients that contribute to a secure environment: territoriality, or a

proprietary interest in one's property; and surveillance, or the ability to observe what is going on in lobbies, elevators, streets, parking lots, and the like. Newman suggested that public, semiprivate, and private space could be designed to improve territoriality and surveillance. This, in turn, would deter criminal activity by creating defensible spaces.

Newman's concept came to be the core of most environmental design and planning related to crime prevention, including a series of demonstration programs funded by the *U.S.* Department of Justice's Law Enforcement As-

Clusters of homes surround a courtyard that contains both parking and resident recreation facilities. Residents can see what is going on, but outsiders cannot (above right).

Real and symbolic barriers mark the transition from public street to private neighborhood. Fences define the territory assigned to individual units (below and left).

Graphics show how the failure to define space results in general disarray and gives the appearance there is no ownership. Adding curbs, gutters, sidewalks, landscaping and designated parking spaces defines territory and improves the sense of ownership/social control. (Note—no gate or guard!)

sistance Administration (LEAA) during the 1970s. The Westinghouse Electric Corporation completed a school demonstration in Broward County, Florida; a commercial demonstration in Portland, Oregon; and a residential/mixed-use project in Hartford, Connecticut. Although these efforts were defined as "crime prevention through environmental deign" (CPT-ED) programs, they were not based on Jeffery's work by that title but instead expanded on Newman's territoriality and surveillance themes.

Westinghouse recommended site-, block-, and neighborhood-level analysis, with improvements directed at such tangible problems as inadequate lighting and at less tangible issues that included neighborhood image. Students, business people, and residents actively participated in the design and decision-making process and, wherever possible, were assigned "ownership" or responsibility for space.

This historical discussion makes two issues clear. First, man has attempted to control behavior through design for centuries. Second, land use and transportation play important roles in the ability to bring about appropriate behaviors and limit exposure to crime. Crime prevention through environmental design offers a framework for planning, designing, and building safer communities.

Designing and Building Safe Neighborhoods

Three fundamental "Principles for Good Neighborhoods" developed for Hillsborough County (Florida) show how good neighborhood design is compatible with the CPTFD design concepts of natural access control, natural surveillance, and territorial behavior.

• The neighborhood is designed with human scale foremost.
• Neighborhood design fosters communications.
• Neighborhood design creates a sense of ownership and responsibility.

CPTED creates communities whose property owners and residents know one another and recognize outsiders. Streets, lots, and homes in a neighborhood are laid out so that it is possible to distinguish between public and private property. Windows, lighting, and landscaping allow observation both on to and from individual parcels. When a neighborhood is arranged in this manner, local residents are comfortable in questioning and reporting unusual behavior.

Yet, it is possible that we are our own worst enemies when it comes to good neighborhood design. In an effort to separate land uses, retain open space, eliminate health and environmental hazards, and provide public services and facilities, we have created an environment that hinders, not fosters, safety and security.

Further, changing values and social structures have caused us to modify the way that we design homes and neighborhoods, often resulting in an environment that undermines CPTED objectives. A prime example is our shift from a front porch/front yard community to a patio/barbecue/back yard community. In the process, homeowners have relinquished "ownership" of

the front yard and the street, making this territory available for ownership by outsiders.

More recent trends in neighborhood design that call for narrow front setbacks, fences, and front porches help us reclaim ownership of the street. These design elements also define the transition from public street and sidewalk to semipublic front yard to semiprivate front porch to the privacy of the home, a prime objective of CPTED.

Cluster development, another well-intended technique used to preserve open space, can instead create a "no man's land." Unless green space is planned into the primary activities of the neighborhood (e.g., town square, park, bikeway), it has no owner, no one to protect it from outsiders.

Local development codes often stand in the way of safe design. Consider, for example, the community's desire to conceal parking or other wide expanses of pavement (such as tennis courts). Landscaping that serves as a barrier to public view also eliminates needed opportunities for surveillance by police or other passers-by. There is a difference between a "screen" or "buffer" and a "barrier"—both in application and their impact on behavior. In the end, a parking lot could become the site for automobile theft, assault, or other types of victimization. An alternative buffer would use low plant materials combined with a tree canopy, leaving the area in between (three to

eight feet from the ground) open for surveillance.

Safe/Unsafe Activities and Locations

CPTED provides a process for determining what design approach is appropriate for each location or activity based on that space's unique needs and problems. Experience with CPTED has shown that the most important consideration is to articulate the behavioral objectives for a given space. Careful specification of objectives leads to the most appropriate design and space use decisions.

When planning and designing for CPTED, it is necessary to rate human activities and locations in terms of their inherent vulnerability to victimization and risk. Activities and locations are deemed safe or unsafe in direct relation to the presence or absence of the three key concepts of CPTED: natural surveillance, natural access control, and territorial behavior.

Safe locations are often found next to high-activity areas or are associated with organized functions such as an administrative office or some type of concession stand or sales booth. Visibility from windows provides an overlook of the setting. By providing the perception of access control and surveillance, safe activities make the user feel safer and the offender feel at greater risk of exposure. Therefore, parking—an "unsafe" activity when hidden behind or away from a building or out of the line of sight of activities-becomes a "safe" activity when located in front of a building or on a frequently used street.

Consider, too, that a particular location may be safe at one time of the day or day of the week but unsafe at other days or times. Parks and recreation facilities often are designed and staffed for day use when, in fact, they see greater use by some demographic groups on evenings and weekends, perhaps leaving the park without an "owner" during otherwise normal ac-

tivity periods. Without an owner, the park becomes unsafe and is exposed to opportunities for vandalism or other crime. Changes in staffing schedules or the introduction of organized ("safe") activities brings legitimate users or owners into the park. As a result, an unsafe location becomes more secure.

Crime and Traffic

It is possible that neighborhood street design represents the single most important and controversial issue in CPTED. As mentioned, research on criminal behavior shows that an offender selects a target in familiar territory. Particularly vulnerable are neighborhoods where demographic characteristics allow anonymity. Heavily traveled streets, perimeter or corner sites, or locations near major highways allow easy approach and escape and are the criminal's preference. Neighborhood image also plays a role in the perception of risk: indications of a lack of social control (e.g., heavy traffic, vandalism, and poor maintenance) contribute to target selection. Accordingly, crime can be linked to the amount of itinerant traffic in a neighborhood.

Many would suggest that the easiest way to resolve traffic-related crime would be to close and gate streets and erect fences or walls around the neighborhood. Permanent street closure is an extreme measure, which, if crime conditions warrant, may be needed to secure a neighborhood haven. This type of fortressing prohibits access to all but local residents and their guests. The gain to the developer, however, may be the community's loss. How a neighborhood relates to and interacts with an adjacent neighborhood and the rest of the community is as important to deterring crime as how well its residents communicate with one another.

Pompano Beach, Florida, encountered a situation where reconstruction along old Dixie Highway forced all cross streets to be closed at the Dixie right-of-way. Drug trafficking, rob-

beries, assaults, and other crimes prevalent in the adjacent neighborhood were all but eliminated during construction. Although side streets were reopened after construction, Pompano Beach used this experience to plan traffic modifications and police patrols to control access to adjacent neighborhoods.

Opa Locka, Florida, identified a neighborhood where drugs and crime were running rampant. In an effort to reduce neighborhood "porosity," the city elected to close a number of streets. However, in this case, while the street closing prevented drug dealers from entering the neighborhood, the criminals began conducting business across the barrier instead.

The decision to change traffic patterns requires thorough research, careiul analysis, and a systematic selection of alternatives. Street users need to participate in design and management of the street. Equally important are neighbors affected by design, and they, too, should be involved in planning.

Real and symbolic resident control can be provided through signage, paving, landscaping, and street furniture. Traffic management and/or enforcement may be necessary to control real and perceived traffic problems on the street. Whether accomplished by constructing speed bumps or through streets, the solution depends on the situation at hand: the physical environment, type and amount of crime, etc., and the preferences of those involved in the process. What is ultimately feasible may be determined by cost alone and not by public sentiment or even by the quality of the alternative. Opportunities abound, though, to create safe, stable neighborhoods through proper management of local streets—without using a guard or a gate.

Another approach considers what might be done over the long-term to improve street design. Many communities require a residential street right-of-way wide enough for efficient traffic

flow and emergency access. However, one lane of traffic each way plus on-street parking in a neighborhood whose homes have driveways and garages does little to create an intimate neighborhood.

CPTED Strategies

The above discussion suggests a series of general design strategies that can be applied in any situation to improve natural access control, natural surveillance, and territorial behavior.

• Provide a clear border definition of controlled space.

• Provide a clearly marked transition from public to semipublic to private space.

• Locate gathering areas in places with natural surveillance and access control and away from the view of potential offenders.

• Place safe activities in unsafe locations, and unsafe activities in safe locations.

• Provide natural barriers to conflicting activities.

• Improve the scheduling of space to provide for effective and critical intensity of uses.

• Design space to increase the perception of natural surveillance.

• Overcome distance and isolation through improved communications and design efficiencies, e.g., emergency telephones, pedestrian paths.

The Transition to CPTED

Given what is known about the relationship between design and behavior, it will not be long before more people recognize the need for CPTED in decision making. The following activities must occur for CPTED to make the transition to wide acceptability and use:

• Education and training. CPTED must have a place on the curriculum of all professional and academic training programs related to planning, design, and development. In addition, state and local decision makers (e.g., legislators and planning board.members)

need to become familiar with CPTED immediately so that their ongoing decisions reflect the appropriate design principles.

• Codes ordinances and design guidelines. Current codes governing all elements of the built environment need to be updated to incorporate CPTED concepts. Recent examples include the Commonwealth of Virginia building code and the Sarasota, Florida, comprehensive plan and zoning ordinance. Toronto, Ontario, has prepared an excellent "Working Guide for Planning and Designing Safer Urban Environments."

• Design review. CPTED concepts need to be included in an expanded design review that emphasizes interagency and interdisciplinary approaches to decisions about the design and use of the built environment. In particular, the local law enforcement agency should participate in the review process.

• Code enforcement. The uneven and inconsistent enforcement of existing codes is a major cause of the deterioration of our communities. Interdisciplinary approaches to code enforcement must be used as a tool to prevent decay and to stimulate the revitalization of our communities. Streamlining the enforcement process also may help in this regard.

• Litigation. The courts are rapidly becoming a tool for forcing people to make better decisions about human space. It is human nature to overlook all of the good reasons for doing things right, i.e., quality of life, profit, aesthetics, and reduced victimization and loss, and instead wait for civil law to require change—often at great cost.

The greatest impediment to the widespread use of CPTED is ignorance, but other factors enter into its acceptance as a viable approach for planning and design. First, it has become common fir planners, transportation engineers, developers, public housing officials, and code enforcement authorities to coordinate and cooperate through

"subtle conflict." That is, rather than fight openly, they each stick to an established territory. Consequently, many fundamental concerns remain unaddressed and lead to distressed business areas and declining neighborhoods—all of which stand as a permanent legacy to the "failure to communicate."

Second, some "professionals" have attempted to exploit CPTED without developing a full understanding of the concept. These people use a limited number of applications, such as street closing, in the name of crime prevention through environmental design without considering local problems and needs. When these applications fail, they give CPTED a bad name.

Third, some believe that crime prevention through environmental design is merely a fad that will vanish with time. CPTED is a self-evident concept that has been used successfully for many years. Research and demonstration activities over the past 30 years have confirmed what many people think is just common sense. •

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